

REMARKS

Reconsideration and allowance of subject application are respectfully requested. Upon entry this Amendment, claims 4-9 and 13-17 are pending in the application. In response to the Office Action (Paper No. 7), Applicant respectfully submits that the pending claims define patentable subject matter.

By this Amendment, Applicant has canceled claims 1, 2, 10 and 11 without prejudice or disclaimer and rewritten claims 4 and 13 in independent form including all of the limitations of base claims 1, 2, 10 and 11. Applicant respectfully submits that these amendments should be entered since they do not change the scope of claims 4-9 and 13-17 or present new issues which would require further consideration or search.

I. The Present Invention

The present invention is directed to a printer and printing method for designating different printing modes between a plurality of types of recording sheets, such as recording sheets of a standard type and a 16-frame sticker type. As shown in Figures 1-3, a color thermal printer 10 includes a printer body 11 and a sheet supply container 12 mounted in the printer body 11 in a removable manner. A display device 13 is connected with a printer component of the thermal printer 10, and displays an image to be printed.

The sheet supply container 12 includes a printed circuit board 40 including a first contact pattern 40a, and a read only memory (ROM) 41 which stores type information of the recording sheets 33 (a size and a type of the recording sheets 33) contained in the container body 30. The

printer body 11 includes a pin-shaped contact member 42 as a second contact pattern. When the sheet supply container 12 is set in a sheet supply position, the contact member 42 contacts the contact pattern 40a, thereby connecting a system controller 45 incorporated in the printer body 11 with the ROM 41. The system controller 45 controls various components of the printer body 11 and effects printing operation according to a frame stored in a smart media 16 inserted in the printer body 11.

As shown in Figures 4-6, the type information from the ROM 41 is evaluated to determine whether the sheet supply container 12 contains a standard type of the recording sheets or a 16-frame sticker type of the recording sheets. Based on the evaluation of the type information from the ROM 41, a standard printing mode or a 16-frame sticker printing mode is designated, and a standard printing menu 50 or a sticker printing menu 60 is displayed in the display device 13 for designating a particular frame to be printed and the number of prints to be produced via input keys 20-25 disposed on the printer body 11.

Alternatively, the type information may be provided by a predetermined pattern of projected and retracted segments, white and black dots, a bar code, or other indicia disposed on the sheet supply container and read by a photo sensor provided in the printer. Further, the sheet supply container may be provided with a magnetic recording medium for storing the type information, and a magnetic head may be provided in the loading slot for reading the type information from the magnetic recording medium. Lastly, the type information may be prerecorded on a rear surface or near an edge of the recordings sheets, and a reader may be provided in the loading slot for reading the type information from the recording sheets.

II. Prior Art Rejections

A. Disclosure of Yamashita et al.

Yamashita et al. (U.S. Patent No. 5,642,147; hereafter "Yamashita") is directed to a thermal printer capable of producing labels, in addition to printing on normal paper. The printer includes a switching unit for switching between a label making mode and a normal printing mode. In the label making mode, characters are printed onto a receptor tape using a special label-making ink ribbon cassette. In the normal printing mode, a normal ink ribbon cassette is substituted for the special label-making cassette.

As shown in Figures 1 and 2, a thermal printer includes a carriage 11 disposed in opposition to a platen 10 so that it can reciprocate in the extending direction of the platen. The carriage 11 is constructed so as to carry on the upper surface thereof an ink ribbon cassette 20 containing an ink ribbon 24. On the carriage 11 is disposed a photosensor portion 15 for sensing a reflected light from a reflecting plate disposed on the ribbon cassette 20 side. The photosensor portion 15 comprises a light emitting element 15a for emitting light toward the reflecting plate disposed on the ink ribbon cassette 20 and a light receiving element 15b for receiving the light reflected from the reflecting plate.

The printer body is provided with a printing mode switching unit 16 in the form of a switch for switching between a first mode as a label making mode involving printing on an elongated receptor tape and a second mode as an ordinary paper printing mode. A paper detecting switch 17 as a paper detecting means is disposed in a conveyance path of paper which

is fed in the second mode. The photosensor portion 15, mode switching unit 16 and paper detecting switch 17, which detect a printing mode of the printer, paper and ribbon end, are connected to a controller 18 which controls the printing operation on the basis of the results of the detections.

During the label printing (first) mode, printing conditions in the label making mode such as the width of the receptor tape 23, whether the indication of dotted lines for cutting is present or not, and the label length, are inputted to the controller 18 of the thermal printer by the use of an input means such as a keyboard or the like. The label-making ink ribbon cassette 21 is placed on the carriage 11 of the printer, then the mode switching unit 16 is set to the label making mode, and printing is started. At this time, when the controller 18 detects a printing signal, the presence or absence of paper is checked by the paper detecting switch disposed in the paper conveyance path. If the presence of paper is detected by the paper detecting switch 17 during the label making mode, an error is indicated by the controller 18 and the receptor tape 23 is not drawn out from the interior of the ribbon cassette case 21.

During the ordinary paper printing mode (second mode), the printing operation is commenced if the presence of paper is detected by the paper detecting switch 17, and an error is indicated by the controller 18 if the absence of paper is detected by the paper detecting switch 17.

B. Disclosure of Lindstrom et al.

Lindstrom et al. (U.S. Patent No. 6,079,807; hereafter "Lindstrom") is directed to a printer which automatically selects the print mode depending upon media type. As shown in Figures 1 and 2, a printer 20 includes a tray 22 to hold a stack of media 24 which is taken from the tray 22, passed through a primary printing unit 26, which holds the printing mechanism, and returned to an output holder positioned above the tray 22. The printer 20 includes a media handler 30, a media sensor 32, and a printing mechanism 34. The media handler 30 consists of guides, rollers, motor, and other parts used to extract a single media sheet 36 from the tray, move it through the primary printing unit throat and through the printing mechanism, and deposit it to the output holder. The media sensor 32 is positioned to detect the media type during the loading process as it is drawn from the tray 22 into the primary printing unit 26. The media sensor 32 may be a through-beam optical interrupter sensor and is capable of detecting whether the media is a transparency or a piece of opaque plain paper and differentiating among various types of transparencies. Based on which media type is detected, the media sensor 32 outputs different signals to the printing mechanism 34.

The printing mechanism 34 includes a controller 40 and at least one printhead 42. The controller 40 receives a print file 44 from a host computer and commands the printhead 42 to print marks on the media 36 as the media moves through the printer. The controller 40 includes a printhead driver 46 to control the physical printing functionality of the printhead 42. The driver 46 is operable in different print modes to produce different printing characteristics. The controller 40 also includes a print mode remapper 48 that selects the appropriate print mode for

the driver 46 depending upon the incoming file type and the type of media detected by the sensor 32. The remapper 48 selects a plain paper print mode when the media sensor 32 detects that the media is plain paper (or other opaque type) and the print file is for plain paper. The remapper 48 also selects a from one or more transparency print modes when the media sensor 32 detects that the media is transparent and the print mode is intended for a transparency.

The driver 46 and print mode remapper 48 can be implemented in software or firmware, which is loaded or embedded in a digital storage medium in the printer, such as ROM (read only memory), an EEPROM (electronically erasable, programmable read only memory), and a hard disk drive.

C. Analysis

Claims 4, 5, 7-9, 13 and 15-17 are rejected under 35 U.S.C. § 102(b) as being anticipated by Yamashita. Claims 6 and 14 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamashita in view of Lindstrom. Applicant respectfully submits that the claimed invention would not have been anticipated by or rendered obvious in view of the cited references.

Independent apparatus claim 4 recites “an input section operable to automatically input type information representing one of said types of said recording material, wherein ... said input section includes an information recording medium for storing said type information.” Claim 4 further recites “a sheet supply container, set at said loading slot removably, for containing said recording material, said information recording medium being secured to said sheet supply container.”

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Independent method claim 13 recites “containing a recording material in a sheet supply container settable in a printer, wherein an information recording medium is secured to said sheet supply container; connecting said information recording medium with said printer in response to setting of said sheet supply container in said printer; automatically inputting type information representing one of said types of said recording material by reading said type information stored in said information recording medium.”

With regards to claim 4 and 13, the Examiner (page 3 of the Office Action) asserts that “Yamashita discloses a printer body (column 3, line 4), a loading slot in the printer body (column 5, lines 5-12), a sheet supply container for containing the recording material (column 1, lines 49-54; [and] means for outputting type information (column 2, lines 10-17).” However, Applicant respectfully submits that it is quite clear that Yamashita does not teach or suggest inputting type information representing one of a plurality of types of recording material which is stored in an information recording medium secured to a sheet supply container, as required by independent claims 4 and 13. Rather, Yamashita simply discloses a paper detecting switch for generating a signal indicating the presence or absence of paper in the paper conveying path and inputting printing conditions by the use of an input means such as a keyboard. Similarly, Lindstrom discloses a media sensor 32 (a through-beam optical interrupter sensor) for detecting whether the media is a transparency or a piece of opaque plain paper and differentiating among various types of transparencies.

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Accordingly, Applicant respectfully submits that independent claims 4 and 13, as well as dependent claims 5-9 and 14-17, should be allowable because the applied reference does not teach or suggest all of the features of the claims.

III. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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